

ABSTRACT OF THE DISCLOSURE

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A semiconductor memory device is capable of simultaneously reading data and refreshing data and checking whether a data restoring function is operating normally. A data inputting circuit receives data inputted from an external circuit. A parity generating circuit generates parity data from the data input from the data inputting circuit. A memory stores the data input from the data inputting circuit and the parity data generated by the parity generating circuit. A refreshing circuit refreshes the memory. A reading circuit reads the data from the memory. A restoring circuit restores data to be refreshed by the refreshing circuit from other data read normally and corresponding parity data, while the reading circuit is reading data. A data outputting circuit outputs the data read by the reading circuit and the data restored by the restoring circuit. A parity outputting circuit directly reads and outputs the parity data stored in the memory.